



Dart Hawkesbury
1270 Aberdeen St
Hawkesbury, ON
K6A 1K7
Canada

Tel (613) 632-5200

D4355-1
Job Sheet 164606



Part No: D4355-1

Job Qty: 4 ea

Part Name: Bearpaw



Part Weight: 0 lbs

Status: Scheduled

Priority: Medium

Job Created: 9/30/17

Job Tracking No:

Due Date: 10/31/17

Created By: Mario Poulin

Type: Stock

Description:

Note: DWG REV B IPP REV:A NEW ISSUE 11-04-11 JLMN VERIFIED BY:DD

Ship Via:

Bill of Materials

Part/Part Name	Part Note	Serial No	Quantity	Location
D4355-1 Bearpaw	DWG REV B IPP REV:A NEW ISSUE 11-04-11 JLMN VERIFIED BY:DD		0.000	
MUHMWB10 UHMW 1" Black - 48"x120" Tivar Mfg.#52480104			0.000	

Job Routing

Op No	Operation	Qty	Due Date	Standard		Workcenter/Supplier	
				Setup hrs	Run Hrs	Workcenter / Supplier	Lead Time
90	Start up Operation	4 Ea	10/30/17	0.00	0.00	Start up container	18-02-11
130	CNC Vertical Machining	4 pcs	10/31/17	0.95	13.33	HAAS 1	18-02-11
140	QC	4 pcs	10/31/17	0.00	0.00	QC2	18-02-11
150	QC	4 pcs	10/31/17	0.00	0.00	QC8	18-02-14
151	Packaging	4 pcs	10/31/17	0.00	0.00	Packaging3	18-02-14
190	QC21-SA	4 Ea	10/31/17	0.00	0.00	QC21	FEB 16 2018

Part Op 130 - 1-Inspect material for defects or damage prior to machining. 3-Machine as per Folio FB049 and Dwg. 4-Deburr.
Descriptions:

Job BOM

Part / Item	Component Name	Quantity	Operation	Special Comments
D4355-1 B164606		16 Ea (4 ea)	90-Start up Operation	

Job Allocations

Operation	Component Part	Required	Inventory	Allocated	Std Qty
90-Start up Operation	D4355-1 B164606	16	4	0	0

Part Specifications

Specifications could not be found

Status: Stock

Part: **D4355-1 B164606**

Created: 9/30/17 1:20 PM DART.MICHAUD-
FEBRILLE.VICTORIA



Serial No: **S000244**

Printed By: Goldston, Justin 10/2/17 10:45 AM

DART
AEROSPACE
S041067

Dart Aerospace Ltd.
1270 Aberdeen Street
Hawthorn, ON K64 1K7
CANADA
TEL: 1 613 632-5200
Email: sales@dartaero.com
www.dartaerospace.com



Bearpaw

PART NO: D4355 - 1
Original Serial #: S041067
Revision:
Operation: Start up Operation
Change No:

02/10/18
Job No: 164606

Work Order Summary

Thursday, September 28, 2017 7:36:01 AM

Page 1 of 1

Criteria : Work Order ID: 164606 Item ID: D4355-1 Product Family MACHINING
Work Order Start Dates 7/13/2017 to 7/13/2017 11:59:59 PM Work Order Required Dates 7/21/2017 to 7/21/2017 11:59:59 PM
All References
Work Order Status Released

Work Order ID 164606 Required Qty 4.0000 Status Code Released
Item ID D4355-1 Accepted Qty 0.0000 Scrap Qty 0.0000
Item Name Bearpaw
Current Acct Value \$502.793

Start Date 7/13/2017 Required Date 7/21/2017 Completed Date

Standard ** Actual ** ** Acct. Value ** ** Variance ** ** Variance % **

Direct Costs	Total	Each	Each	Each	Each
Material	\$485.300	\$0.000	\$158.255	\$158.255	100.00%
Labor	\$36.551	\$0.000	\$108.405	\$108.405	100.00%
Outplant	\$0.000	\$0.000	\$0.000	\$0.000	0.00%
Variable Burden	\$0.000	\$0.000	\$0.000	\$0.000	0.00%
Fixed Burden	\$97.807	\$0.000	\$236.133	\$236.133	100.00%
Material Burden	\$0.000	\$0.000	\$0.000	\$0.000	0.00%
** Total **	\$619.658	\$0.000	\$502.793	\$502.793	

Item ID/Item Name	Required Qty	Issue Code	Issue Date	Issued Qty	Cost Amount
MUHMWB10					
UHMW 1" Black - 48"x120" Tivar Mfg.#52480104	22.3158		8/14/2017	23.0000	\$485.300
Total Matl Amts:					\$485.300

Work Center Waterjet

Employee ID	Rout Seq ID	Labor Date	Setup Hours	Actual Setup Hours	Labor Hours	Actual Labor Hours	Nbr of WOs	Setup Amount	Labor Amount	Fix Burd Amount	Var Burd Amount	Total Amounts
conw01												
8/12/2017												
120			0.00	0.00	0.64	0.64	1.00	\$0.000	\$13.158	\$35.209	\$0.000	\$48.367
8/13/2017												
120			0.00	0.00	0.32	0.32	1.00	\$0.000	\$6.537	\$17.491	\$0.000	\$24.028
8/14/2017												
120			0.00	0.00	0.82	0.82	1.00	\$0.000	\$16.857	\$45.106	\$0.000	\$61.963
Total:			0.00	0.00	1.77	1.77	3.00	\$0.000	\$36.551	\$97.807	\$0.000	\$134.358

Work Order ID 164606

Tuesday, July 25, 2017 7:52:33 AM

164606

Page 1

Item ID: D4355-1

Accept

N900040100Setup Start ***NS1***

Revision ID:

Stop ***NS2***

Item Name: Bearpaw

Start Date: 7/13/2017 Start Qty: 4.00

4

Cust Item ID:

Required Date: 7/21/2017 Req'd Qty: 4.00

4

Customer:

Reference:

Approvals: Process Plan: DAS 21 9-89 Date: JUL 25 2017 Tooling: _____ Date: _____Run Start ***NR1***

QC: _____ Date: _____ SPC (Y/N): _____ Date: _____

Stop ***NR2***

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
--------------------------------	--------------------------	----------------------	---------	--------	--------------	---------------	---------------	------------------	----------------

Draw Nbr

Revision Nbr

D4355

B

120

0.00

120

FLOW WATER JET

Waterjet

Memo

0.63

FLOW CNC Waterjet

Cut Blank as per D4355-1 File

(4) 07/28/13

130

0.00

130

HAAS CNC VERTICAL MACHINING #1

HAAS 4

Memo

20.72

HAAS CNC vertical machine #4

1-Inspect material for defects or damage prior to machining.

2-Program batch number. Ensure that batch number reflects the W/O.

3-Machine as per Folio FB049 and Dwg.

FOLIO REV: 9ADWG REV: B

4-Deburr.

(4) 07-02-11 DAS 1 9-89

DQA: _____ Date: _____



WORK ORDER NON-CONFORMANCE / UPDATE

QA Closed: _____ Date: _____

Work Order update only ☐

Work Order: _____ Part No. _____ NCR No. _____	DISPOSITION Rework ☐ Scrap ☐ Use-as-is ☐ Suspected Unapproved ☐	AGAINST DEPARTMENT/PROCESS Skid-tube ☐ Machining ☐ Thermoforming ☐ Large Fab ☐ Cross tube ☐ Small Fab ☐ Finishing ☐ Composite ☐ Water Jet ☐ Prod. Eng. Coord. ☐ Rec/Store/Packaging ☐ Supplier ☐ Engineering ☐ Quality ☐ Other ☐			
Date :	Step #:	QTY Effective :		MRB (QSI042) Approval	
Description Work Order Deviation		Disposition		Completed By Lead hand / Supervisor Approval Verification QC / QA Coordinator Approval	
Root Cause Environment ☐ Design ☐ Doc/Data ☐ Equip/Tooling ☐ Handling/Pre ☐ Material ☐ Internal Transport ☐ Tribal Knowledge ☐ LOA ☐ Substation ☐ Past Expiry Date ☐ Misidentified ☐ No Re-verification ☐ Operator ☐ Offset/Setup ☐ Supplier ☐ Training ☐ Use for Testing ☐ Poor Information ☐ Rushing ☐ Product Improvement ☐ Process Improvement ☐ Manufacturing Process ☐ Past Due ☐		FAULT CATEGORY Pressure/Forced ☐ Bending ☐ Centre Not Concentric ☐ Cracks ☐ Crimp/Kink/Ripple/Wave ☐ Cuffs ☐ Crushing ☐ Heat Treat ☐ Wave/Twist in Tube ☐ Marks/Chatter ☐ Temperature/Cure ☐ Set-up ☐ BOM/Route ☐ Broken/Damage/Defect ☐ Inspection Incomplete/Unqualified ☐ Contamination ☐ Countersink ☐ Cut Too Short ☐ Instructions Incomplete/Unclear ☐ Drill Holes ☐ Power Loss/Surge ☐ Folio/Program ☐ Grain ☐ Weld ☐ Wrong Stock Pulled ☐ Out of Sequence ☐ Off-set ☐ Mislabeled ☐ Fit/Function ☐ Misaligned/off center ☐ Positioned Wrong ☐ Outside Dimensions ☐ Over/Under tolerance ☐ Part Incorrect ☐ Part Lost/Missing ☐ Part Moved ☐ Drawing ☐ Finish ☐ Misread ☐ Turning Sequence ☐			
		OTHER :			

Tuesday, July 25, 2017 7:52:33 AM

Page 2

Packaging

DQA: _____ Date: _____



WORK ORDER NON-CONFORMANCE / UPDATE

QA Closed: _____ Date: _____

Work Order update only ☐

Work Order: _____ Part No. _____ NCR No. _____	DISPOSITION Rework ☐ Scrap ☐ Use-as-is ☐ Suspected Unapproved ☐	AGAINST DEPARTMENT/PROCESS Skid-tube ☐ Machining ☐ Thermoforming ☐ Large Fab ☐ Cross tube ☐ Small Fab ☐ Finishing ☐ Composite ☐ Water Jet ☐ Prod. Eng. Coord. ☐ Rec/Store/Packaging ☐ Supplier ☐ Engineering ☐ Quality ☐ Other ☐			
Date :	Step #:	QTY Effective :		MRB (QSI042) Approval	
Description Work Order Deviation		Disposition			
2AG ↑ BB-8				Completed By	
				Lead hand / Supervisor Approval Verification	
				QC / QA Coordinator Approval	
Root Cause Environment ☐ Design ☐ Doc/Data ☐ Equip/Tooling ☐ Handling/Pre ☐ Material ☐ Internal Transport ☐ Tribal Knowledge ☐ LOA ☐ Substation ☐ Past Expiry Date ☐ Misidentified ☐ No Re-verification ☐ Operator ☐ Offset/Setup ☐ Supplier ☐ Training ☐ Use for Testing ☐ Poor Information ☐ Rushing ☐ Product Improvement ☐ Process Improvement ☐ Manufacturing Process ☐ Past Due ☐		FAULT CATEGORY Pressure/Forced ☐ Bending ☐ Centre Not Concentric ☐ Cracks ☐ Crimp/Kink/Ripple/Wave ☐ Cuffs ☐ Crushing ☐ Heat Treat ☐ Wave/Twist in Tube ☐ Marks/Chatter ☐ Temperature/Cure ☐ Set-up ☐ BOM/Route ☐ Broken/Damage/Defect ☐ Inspection Incomplete/Unqualified ☐ Contamination ☐ Countersink ☐ Cut Too Short ☐ Instructions Incomplete/Unclear ☐ Drill Holes ☐ Power Loss/Surge ☐ Folio/Program ☐ Grain ☐ Weld ☐ Wrong Stock Pulled ☐ Out of Sequence ☐ Off-set ☐ Misabeled ☐ Fit/Function ☐ Misaligned/off center ☐ Positioned Wrong ☐ Outside Dimensions ☐ Over/Under tolerance ☐ Part Incorrect ☐ Part Lost/Missing ☐ Part Moved ☐ Drawing ☐ Finish ☐ Misread ☐ Turning Sequence ☐			
OTHER : _____					

Work Order ID 164606

Tuesday, July 25, 2017 7:52:33 AM

164606

Page 3

Item ID: D4355-1

Accept

N900040100Setup Start ***NS1***

Revision ID:

Stop ***NS2***

Item Name: Bearpaw

Start Date: 7/13/2017 Start Qty: 4.00

4

Cust Item ID:

Required Date: 7/21/2017 Req'd Qty: 4.00

4

Customer:

Reference:

Approvals:

Process Plan: _____

Date: _____

Tooling: _____

Date: _____

Run Start ***NR1***

QC: _____

Date: _____

SPC (Y/N): _____

Date: _____

Stop ***NR2***Sequence ID/
Work Center IDOperation
DescriptionSet Up/
Run Hours

Tool ID

Tool #

Plan
CodeAccept
QtyReject
QtyReject
NumberInsp.
Stamp

190

QC21- Final Inspection - Work Order Release

0.00

190

QC

Memo

0.40

Quality Control

DQA: _____ Date: _____



WORK ORDER NON-CONFORMANCE / UPDATE

QA Closed: _____ Date: _____

Work Order update only ☐

Work Order: _____ Part No. _____ NCR No. _____	DISPOSITION Rework ☐ Scrap ☐ Use-as-is ☐ Suspected Unapproved ☐	AGAINST DEPARTMENT/PROCESS Skid-tube ☐ Machining ☐ Thermoforming ☐ Large Fab ☐ Cross tube ☐ Small Fab ☐ Finishing ☐ Composite ☐ Water Jet ☐ Prod. Eng. Coord. ☐ Rec/Store/Packaging ☐ Supplier ☐ Engineering ☐ Quality ☐ Other ☐			
Date :	Step #:	QTY Effective :		MRB (QSI042) Approval	
Description Work Order Deviation		Disposition			
				Completed By	
				Lead hand / Supervisor Approval Verification	
				QC / QA Coordinator Approval	
Root Cause Environment ☐ Design ☐ Doc/Data ☐ Equip/Tooling ☐ Handling/Pre ☐ Material ☐ Internal Transport ☐ Tribal Knowledge ☐ LOA ☐ Substation ☐ Past Expiry Date ☐ Misidentified ☐ No Re-verification ☐ Operator ☐ Offset/Setup ☐ Supplier ☐ Training ☐ Use for Testing ☐ Poor Information ☐ Rushing ☐ Product Improvement ☐ Process Improvement ☐ Manufacturing Process ☐ Past Due ☐		FAULT CATEGORY Pressure/Forced ☐ Bending ☐ Centre Not Concentric ☐ Cracks ☐ Crimp/Kink/Ripple/Wave ☐ Cuffs ☐ Crushing ☐ Heat Treat ☐ Wave/Twist in Tube ☐ Marks/Chatter ☐ Temperature/Cure ☐ Set-up ☐ BOM/Route ☐ Broken/Damage/Defect ☐ Inspection Incomplete/Unqualified ☐ Contamination ☐ Countersink ☐ Cut Too Short ☐ Instructions Incomplete/Unclear ☐ Drill Holes ☐ Power Loss/Surge ☐ Folio/Program ☐ Grain ☐ Weld ☐ Wrong Stock Pulled ☐ Out of Sequence ☐ Off-set ☐ Misabeled ☐ Fit/Function ☐ Misaligned/off center ☐ Positioned Wrong ☐ Outside Dimensions ☐ Over/Under tolerance ☐ Part Incorrect ☐ Part Lost/Missing ☐ Part Moved ☐ Drawing ☐ Finish ☐ Misread ☐ Turning Sequence ☐			
OTHER : _____					

Picklist Print

Tuesday, July 25, 2017 7:52:37 AM

Page 1

Work Order ID: 164606

164606

Parent Item: D4355-1

D4355-1

Parent Item Name: Bearpaw

Start Date: 7/13/2017

Required Date: 7/21/2017

Start Qty: 4.00

Required Qty: 4.00

Comments: IPP REV:A NEW ISSUE 11-04-11 JLMN VERIFIED BY:DD

Component Item ID/ Item Name	Replacement Item ID	Mfg/ Purch	Bin Item	Primary Location	Last Location	Route Seq ID	Unit of Measure	Qty on Hand	Qty per Kit	Total Qty	Qty Issued	Date Issued	Status
MUHMWB10		Purchased	No			120	sf	483.5730	5.3	22.31579			

MUHMWB10

UHMW 1" Black - 48"x120" Tivar Mfg.#52480104

**

DL 7/28/14

Location

Loc Qty

Loc Code

MAT018

483.573

m136453

200

m137443

283.573

23

DQA: _____ Date: _____

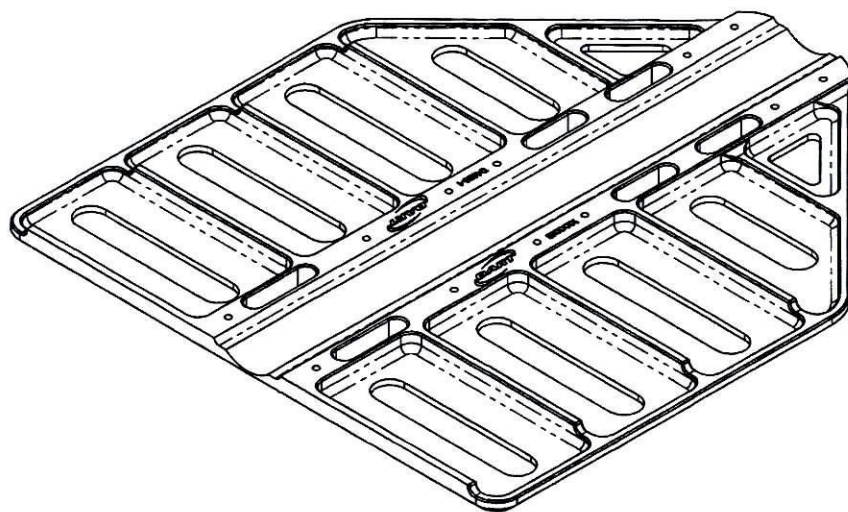


WORK ORDER NON-CONFORMANCE / UPDATE

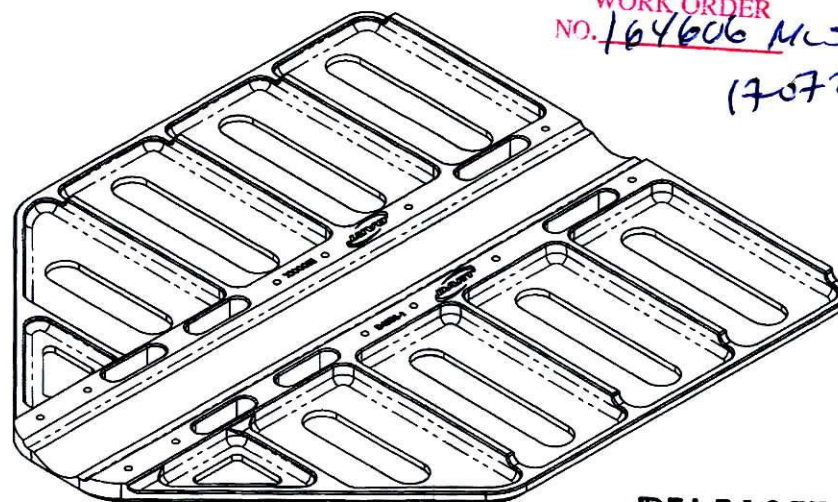
QA Closed: _____ Date: _____

Work Order update only ☐

Work Order: _____ Part No. _____ NCR No. _____	DISPOSITION Rework ☐ Scrap ☐ Use-as-is ☐ Suspected Unapproved ☐	AGAINST DEPARTMENT/PROCESS Skid-tube ☐ Machining ☐ Thermoforming ☐ Large Fab ☐ Cross tube ☐ Small Fab ☐ Finishing ☐ Composite ☐ Water Jet ☐ Prod. Eng. Coord. ☐ Rec/Store/Packaging ☐ Supplier ☐ Engineering ☐ Quality ☐ Other ☐			
Date :	Step #:	QTY Effective :		MRB (QSI042) Approval	
Description Work Order Deviation		Disposition			
				Completed By	
				Lead hand / Supervisor Approval Verification	
				QC / QA Coordinator Approval	
Root Cause Environment ☐ Design ☐ Doc/Data ☐ Equip/Tooling ☐ Handling/Pre ☐ Material ☐ Internal Transport ☐ Tribal Knowledge ☐ LOA ☐ Substation ☐ Past Expiry Date ☐ Misidentified ☐ No Re-verification ☐ Operator ☐ Offset/Setup ☐ Supplier ☐ Training ☐ Use for Testing ☐ Poor Information ☐ Rushing ☐ Product Improvement ☐ Process Improvement ☐ Manufacturing Process ☐ Past Due ☐		FAULT CATEGORY Pressure/Forced ☐ Bending ☐ Centre Not Concentric ☐ Cracks ☐ Crimp/Kink/Ripple/Wave ☐ Cuffs ☐ Crushing ☐ Heat Treat ☐ Wave/Twist in Tube ☐ Marks/Chatter ☐ Temperature/Cure ☐ Set-up ☐ BOM/Route ☐ Broken/Damage/Defect ☐ Inspection Incomplete/Unqualified ☐ Contamination ☐ Countersink ☐ Cut Too Short ☐ Instructions Incomplete/Unclear ☐ Drill Holes ☐ Power Loss/Surge ☐ Folio/Program ☐ Grain ☐ Weld ☐ Wrong Stock Pulled ☐ Out of Sequence ☐ Off-set ☐ Misabeled ☐ Fit/Function ☐ Misaligned/off center ☐ Positioned Wrong ☐ Outside Dimensions ☐ Over/Under tolerance ☐ Part Incorrect ☐ Part Lost/Missing ☐ Part Moved ☐ Drawing ☐ Finish ☐ Misread ☐ Turning Sequence ☐			
OTHER : _____					



D4355-1 206L/407 BEARPAW



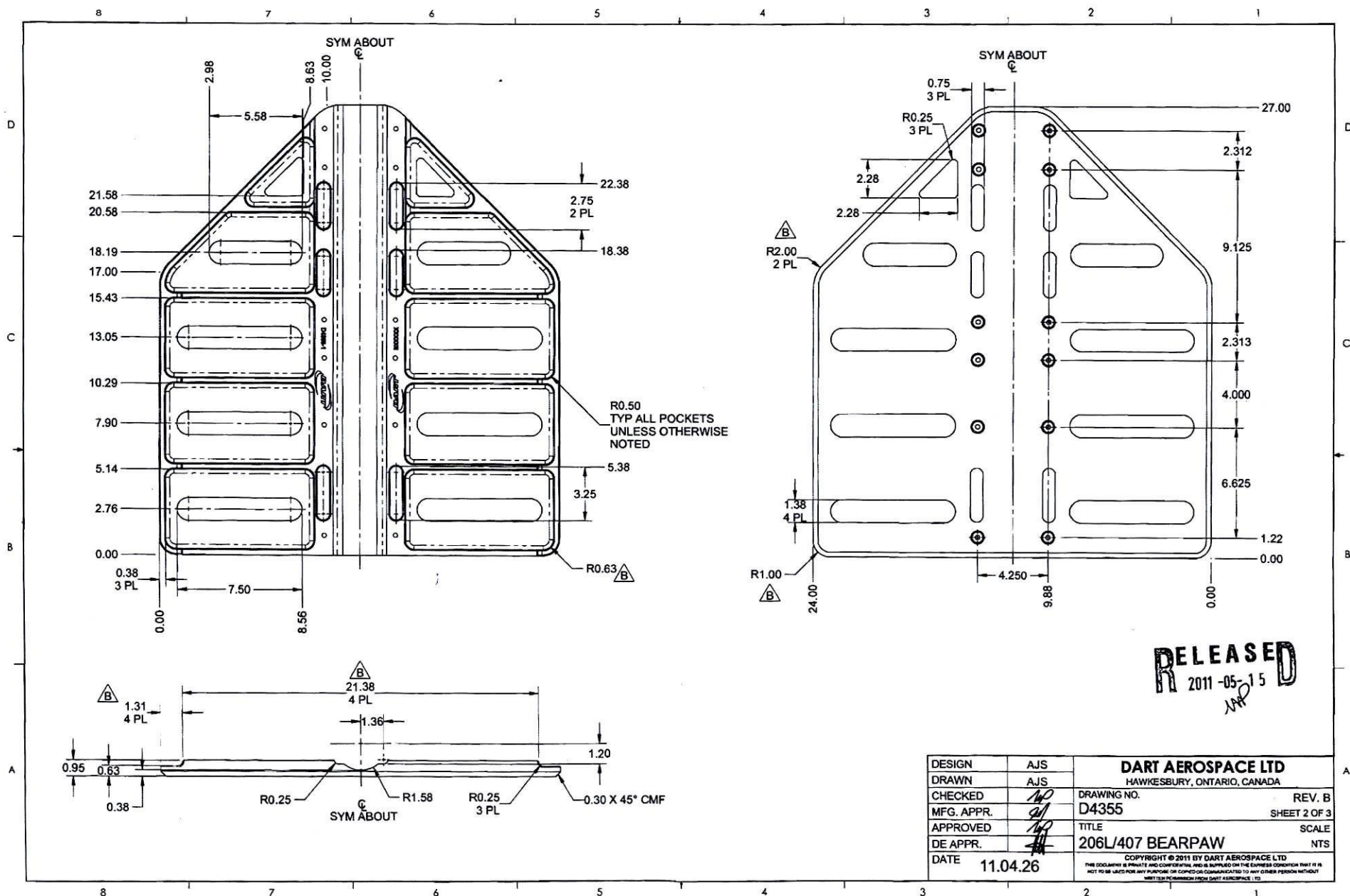
SHOP COPY
RETURN TO
ENGINEERING
UNCONTROLLED COPY
SUBJECT TO AMENDMENT
WITHOUT NOTICE
WORK ORDER
NO. 164606 MLS
170725

RELEASED
2011-05-10
JD

NOTES:

- 1) MATERIAL: UHMW BLACK SPEC CONTROL DRAWING D2689, 1.000 THICK.
- 2) FINISH: NONE
- 3) TOLERANCES: PER DART QSI 018 UNLESS OTHERWISE NOTED
- 4) UNITS: INCHES UNLESS OTHERWISE NOTED
- 5) BREAK SHARP EDGES: N/A
- 6) IDENTIFICATION: ENGRAVE WITH DART P/N "D4355-1" AND B/N "BXXXXX"
0.010 - 0.012 DP AS SHOWN
- 7) WEIGHT: 6.88 lbs
- 8) ENGRAVE "DART" LOGO AS SHOWN 0.003 - 0.005 DP. 

B	SHT 1 WEIGHT CORRECTED WAS 8.41 lbs. SHT 2 RIB DIMS UPDATED. ZN B4 RAD WAS 2.00. SHT 3, SECT. B-B RIB HEIGHT INCREASED. ALL SHTS DART LOGO UPDATED.		AJS	11.04.26
A	NEW ISSUE		AJS	11.03.21
REV.		DESCRIPTION	BY	DATE
DESIGN		AJS	DART AEROSPACE LTD HAWKESBURY, ONTARIO, CANADA	
DRAWN		AJS		
CHECKED		<i>JD</i>	DRAWING NO.	REV. B
MFG. APPR.		<i>JD</i>	D4355	SHEET 1 OF 3
APPROVED		<i>JD</i>	TITLE	SCALE
DE APPR.		<i>JD</i>	206L/407 BEARPAW	NTS
DATE		11.04.26	COPYRIGHT © 2011 BY DART AEROSPACE LTD THIS DOCUMENT IS PRIVATE AND CONFIDENTIAL, AND IS SUPPLIED ON THE EXPRESS CONDITION THAT IT IS NOT TO BE USED FOR ANY PURPOSES OR COMMERCIALIZED TO ANY OTHER PERSON OR ENTITY WITHOUT WRITTEN PERMISSION FROM DART AEROSPACE LTD.	



8 7 6 5 4 3 2 1

D

D

C

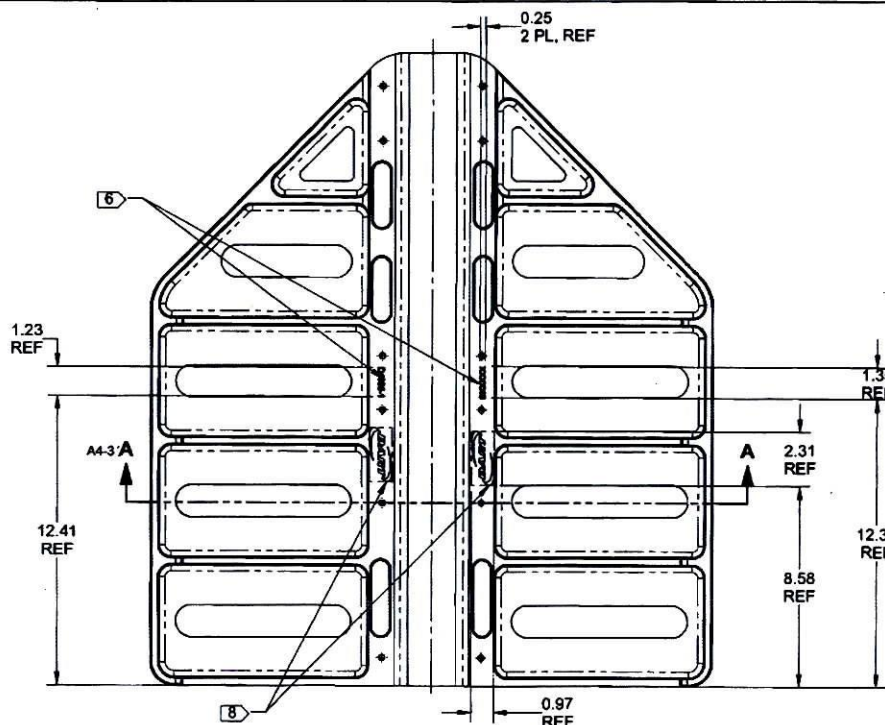
C

B

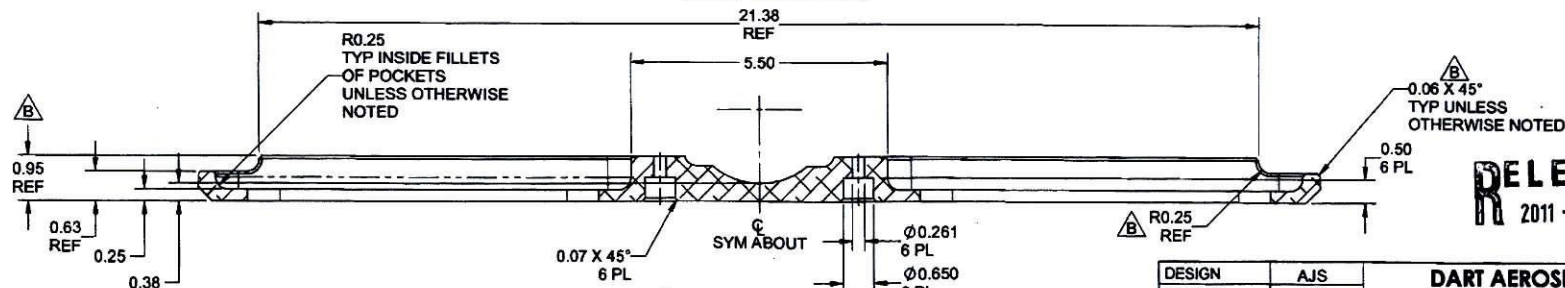
B

A

A



(SUPPLEMENTAL VIEW)



SECTION A-A
SCALE 2X

DESIGN AJS
DRAWN AJS
CHECKED [Signature]
MFG. APPR. [Signature]
APPROVED [Signature]
DE APPR. [Signature]
DATE 11.04.26

DART AEROSPACE LTD
HAWKESBURY, ONTARIO, CANADA
DRAWING NO. D4355
REV. B
SHEET 3 OF 3
TITLE 206L/407 BEARPAW
SCALE NTS
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2011-05-15

8 7 6 5 4 3 2 1